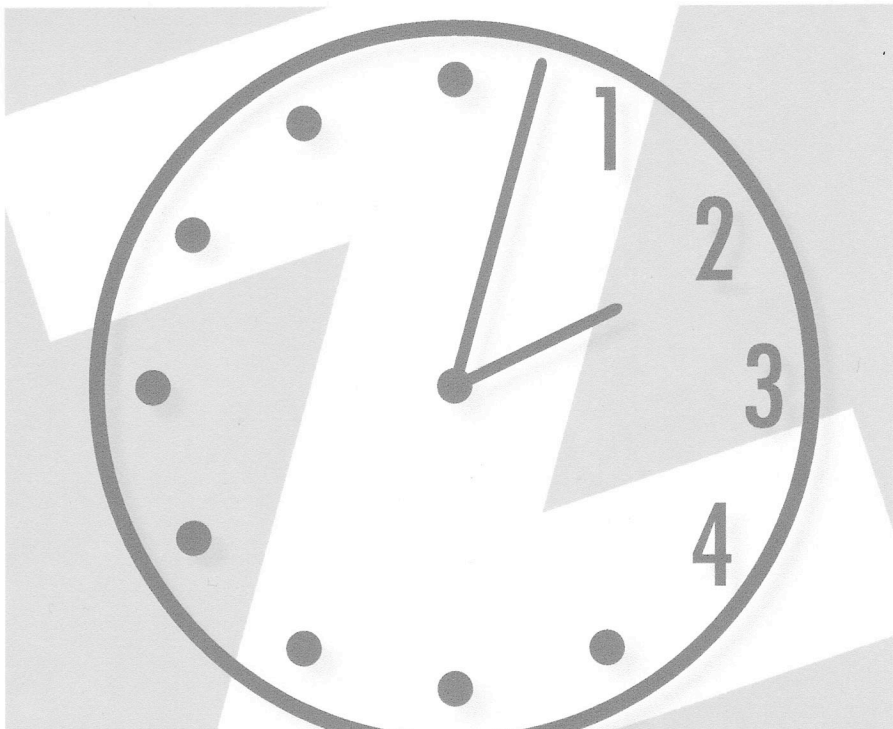




Discoveries



You snooze, you gain

Studies suggest urge to nap is genetically programmed
— and people should take advantage of it

By SUE GOETINCK AMBROSE
Science Writer

Scientists are waking up to the siesta.

Almost everyone admits they feel sleepy in the afternoon. Even so, most people ignore what their body's clock tells them every day and shun naps as a luxury for the lazy.

But some new research may give napping more respect.

Recent studies are offering hints about why people feel sleepy at nap time, what happens in the brain during a nap and to what extent a nap can make up for too little sleep at night.

BIOCHEMISTRY

And even the most professional nappers — babies and young children — may be able to teach adults something about the urge for daytime snoozes. Scientists say that studying naps could ultimately improve human performance.

"If you're not napping and not getting a full night's sleep, you're not doing the best you can," says Sara Mednick, a researcher at the Salk Institute in La Jolla, Calif.

"If it could become normal to have nap time, I think it would benefit not only the worker but the employer as well."

Scientists may stay up late wondering why we sleep, but little attention has been paid to naps, says Marc Weissbluth, a pediatrician and sleep researcher in Chicago.

"There's very little research on napping in general as opposed to night sleep," he says. "Most adults don't nap, so night sleep is studied more."

Some new work from Dallas scientists may have pointed to a gene that controls napping. Last month in the journal *Science*, researchers at the University of Texas Southwestern Medical Center at Dallas described a strain of mice that were missing a gene called *NBA2*. While studying the gene's effect on the animals' daily biological rhythms, the scientists noticed that the nocturnal mice either missed or delayed their usual middle-of-the-night nap.

"I can't explain it," says Steven

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DOUGLAS JONES/Staff Artist

Discoveries

Napping may produce learning

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McKnight, the biochemist who led the study. He speculates that the gene may govern body processes that occur late in the mouse's awake time. This is after midnight for the nocturnal mice, but would be late afternoon for people, who generally are awake during the day.

Other researchers are still debating how much Dr. McKnight's research in mice applies to people.

Different patterns

Jonathan Wisor, a biological rhythm researcher at Stanford University, says that even when you take into account that mice are active at night and people are active during the day, there are a lot of differences between mouse and human sleep patterns. A mouse, for instance, wakes up periodically during the day instead of sleeping soundly the way people can.

"You could say the mice are napping even during the day," Dr. Wisor says.

Still, he says, Dr. McKnight's research does show that the mice's sleepiness in the middle of their active period is real.

"I'm willing to say ... there's a genetic program for the timing of the nap in mice," he says.

In fact, babies and toddlers offer some of the best evidence that genes are biologically based, says Chicago's Dr. Weissbluth.

For instance, Dr. Weissbluth's research, summarized in his parents' guide *Healthy Sleep Habits,*

Healthy Child, has shown distinct patterns in children's napping habits.

"When I look at children 6 months of age and divide [them] into very short or very long nappers, they stay short or long nappers until about 24 months of age," he said. That suggests individual babies have inherent napping habits.

And, he said, babies and young children tend to nap at characteristic times of day. A typical 6-month-old, for instance — if his parents aren't ferrying him around in the car or giving in to his protests over staying alone in his crib — will begin a nap at around 9 a.m., another between noon and 2 p.m., and a third around 4 p.m. before bedding down around 7 p.m. By nine months, the third nap disappears. By 21 months, the morning nap is gone in most children.

And the noontime nap usually fades by age 5.

Time of day

The times of day when drowsiness hits must be built in genetically, Dr. Weissbluth argues, as is the way naps appear and disappear in a characteristic pattern. Although it's not always obvious to parents, the genetic program for sleep habits is there, he says, just like the genetic control of hair color and curliness or eye color. Unfortunately, he said, parents and child-care programs often can't or don't give children the setting they need to sleep soundly at the right time of day.

Since naps appear to be genetically controlled, it's not surprising that they're good for you, says the Salk Institute's Dr. Mednick. In a recent issue of the journal *Nature Neuroscience*, Dr. Mednick and her colleagues at Harvard University and Harvard Medical School showed that after a 60- or 90-minute nap around 2 p.m., people improved their mastery of a computer game. The benefits of the nap, Dr. Mednick says, were equal to the benefits of eight hours of sleep.

"What we're showing is that a nap can actually produce learning," she says.

To show the maximum benefits, she says, people needed to experience two types of sleep during their nap — slow wave sleep and REM sleep. A nap without REM sleep didn't improve learning, but it was better than no nap at all. Without a nap, people got worse at the computer game as the day went on.

"You can be really effective by having a nap in the middle of the day, but you have to make sure you have the right quality of nap," she says.

If a nap can help people learn a new task just as well as a night's sleep, perhaps napping can substitute for sleep in other situations, too, says David Dinges, a sleep researcher at the University of Pennsylvania in Philadelphia. Dr. Dinges is conducting research for the National Space Biomedical Research Institute. Astronauts notoriously get only four to six hours of

sleep in a 24-hour period. After several days, this lack of sleep can cause lapses in concentration and slow reaction times, not to mention put people in a lousy mood.

Long-term effects

Dr. Dinges' studies are trying to establish how well a nap can make up for chronic sleep deprivation.

"We're trying to address whether or you can live on naps," he says. "Could you go week after week for four hours a night and one in the day?"

Preliminary results suggest that naps can, indeed, make up for too little sleep at night.

Even though scientists still don't understand what controls the urge to nap, or everything that happens during the nap, the researchers who study naps say they know enough to make napping part of their lives.

UT Southwestern's Dr. McKnight says the couch in his office is there for a reason.

"I take a nap not every day, but maybe two to three times a week," he says.

And the Salk Institute's Dr. Mednick says that because she takes naps often, she just plain feels better when she misses one. If you're interested in feeling better and sharper, it's worth giving naps a try, she says.

Americans are horribly sleep-deprived," she says. "It's hard to say, but, yeah, probably we could do much better."

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HEALTH ROUNDUP



FILE 2003/Detroit Free Press

Parents should resist the temptation to use food to control children's behavior, new research suggests.

Food use to control kids may lead to eating woes

Using food to reward or punish kids may lead to troubled eating patterns when they grow up, a new study says.

The study, from Yale University, surveyed 122 adults about their weight and dieting history, parental attitudes, current eating patterns, and the kinds of food rules they were subject to as children. The rules included those restricting certain foods (such as "no snacking"); those encouraging eating ("clean your plate"); and those used to control behavior (be-

and indicates when to deliver a shock).

But the devices were developed for adults and are based on adult rhythms. Many experts worry that AEDs are too powerful for children and are not accurate in interpreting a child's heart rate.

A study in this month's *Annals of Emergency Medicine*, however, suggests that AEDs are accurate even for newborn infants. Doctors from Vanderbilt University Medical Center tested the AEDs in 203 children ages 1 day to 7 years. The children were in the hospital for a variety of medical conditions, including heart defects, asthma and

HEALTH

Roll up your sleeves: Carter

test will be held Tuesday between noon and 12:30 p.m. to check computer compatibility. Visit

972-412-6170 for reservations. Study, says: Researchers at the University of Texas South-

estrogen patch. Volunteers must not suffer from bowel, kidney or heart disease, or have a history of